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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/533,450	03/23/2000	Mark D. Lund	10991387-1	9914

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EXAMINER

LEE, TOMMY D

ART UNIT PAPER NUMBER

2624

DATE MAILED: 09/09/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/533,450

Applicant(s)

LUND, MARK D.

Examiner

Thomas D. Lee

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 and 5. 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,866,532 (Ayata et al.) in view of U.S. Patent 5,231,519 (Koike).

Regarding claims 1, 4 and 5, Ayata et al. teach a method whereby the resolution of color pixels is reduced by a factor of two with respect to black pixels. Black pixels and color pixels are generated at a first resolution of 16 dots/mm, and the resolution of the color pixels is reduced to a second resolution of 8 dots/mm. The color pixels are printed at the second resolution, along with the black pixels, which are printed at the first resolution (read Abstract; column 14, line 20 – column 15, line 9). This differs from applicant's claims 1 and 5, wherein the resolution of the black pixels is doubled with respect to the color pixels. This is an obvious modification to one of ordinary skill in the art, for in either case, it was recognized that color pixels are not required to be printed with the fine resolution required for black pixels. Thus, the method taught by Ayata et al. is an obvious modification of applicant's generating, multiplying and printing steps recited in applicant's claims 1 and 5.

Ayata et al. do not teach the steps of selecting a plurality of neighboring pixels, said target pixels and neighboring pixels constituting a pixel window; applying the pixels

Art Unit: 2624

in the pixel window to a logical circuit having a plurality of empirically determined logical conditions; and determining enhanced resolution pixels for the target pixels based on whether said pixel window meets a logical condition, as recited in claims 1 and 4. Koike teach an image processor that selects a pixel window around a target pixel (note Fig. 12A – 12D, 14A – 14H), and the pixels in the window are applied to a logic circuit having plural empirically determined logical conditions, thereby determining the values of enhanced resolution pixels for the target pixels based on the logical conditions (column 5, line 47 – column 6, line 36). It would have been obvious for one of ordinary skill in the art to modify the teaching of Ayata et al. by providing an image processor such as taught by Koike, for Ayata et al. do not provide a means for smoothing jagged edges which are formed as a result of enhancing the resolution of black pixels.

Regarding claim 2, the selection through determining steps as taught by Koike are inherently repeated until all of the original pixels have been processed, thereby completing processing for an entire page.

Regarding claim 3, the first and second resolutions taught by Ayata et al. are 8 and 16 dots/mm (203 and 406 dpi), as opposed to 300 and 600 dpi, as recited in the claim. The choice of resolutions depends upon the capabilities of the printer, and is thus a matter of design choice to one of ordinary skill in the art.

Regarding claims 6 and 7, Koike teaches a window row size of 3 pixels (Fig. 11, 12, 14), which is less than a word size (16 pixels). The actual size of the pixel window is a matter of design choice to one of ordinary skill in the art.

Claims 8-14 recite similar limitations to those recited in the above-rejected claims, and are thus rejected for the reasons set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Lee whose telephone number is (703) 305-4870. The examiner can normally be reached on Monday-Friday (7:30-5:00), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (703) 308-7452. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



Thomas D. Lee
Primary Examiner
Art Unit 2624

tdl
September 4, 2003